

Work Order ID 85430

June-07-12 2:55:39 PM

85430

Page 1

Item ID: D6102-013

Revision ID:

Item Name: Saddle Billet

Start Date: 07/06/2012 Start Qty: 40.00

Required Date: 14/06/2012 Req'd Qty: 40.00

Reference:

Accept

N900040100Setup Start ***NS1***Stop ***NS2***

Cust Item ID:

Customer:

40***40***Approvals: Process Plan: MLJDate: 12/06/07 Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run Start ***NR1***Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr Revision Nbr

D6102 Rev D

100 PURCHASING 0.00

100

Purchasing

Purchasing

Memo

0.00

Issue P/O: 17190 a) Description: Aluminum Billet(b) 7.000" x 6.500" x 2.000" thick(c) Tolerance on all dimensions is +0.06/0.00d) Grain direction along 6.500" length(e) Material: 6061-T6/T6511 (QQ-A-250/11 or QQ-A-200/8)Material release certifi

CZ 12/06/12 40

110 Receive & Inspect for Damage & Mat'l Certs 0.00

110

Packaging

Packaging

Memo

0.00

Ensure material certification is attached

Hex A / SD 12-6-15

120 QC6- Inspect dimensions to drawing 0.00

120

QC

Quality Control

Memo

0.00

Check certification to Dwg D6102 for compliance

OK 12/06/1540

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 85430

85430

Page 2

June-07-12 2:55:39 PM

Item ID: D6102-013

Accept

N900040100

Setup Start ***NS1***

Revision ID:

Item Name: Saddle Billet

Stop ***NS2***

Start Date: 07/06/2012 Start Qty: 40.00

40

Cust Item ID:

Required Date: 14/06/2012 Req'd Qty: 40.00

40

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

130

Identify as per dwg & Stock Location: *MAT 46*

0.00

130

Packaging

Memo

0.00

Packaging

OK 12/06/15

40

12/6/18

140

QC21- Final Inspection - Work Order Release

0.00

140

QC

Memo

0.00

Quality Control

MF
12-06-15

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

June-07-12 2:55:43 PM

Page 1

Work Order ID: 85430

85430

Parent Item: D6102-013

D6102-013

Parent Item Name: Saddle Billet

Start Date: 07/06/2012

Required Date: 14/06/2012

Start Qty: 40.00

Required Qty: 40.00

Comments: IPP Rev:A New Issue 06-07-03 JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
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D6102-013P

Purchased

No

110

Each

0.0000

1

40

D6102-013P

**

6061-T6 7.0x6.5x2.0

40x SP 12-6-15
W

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

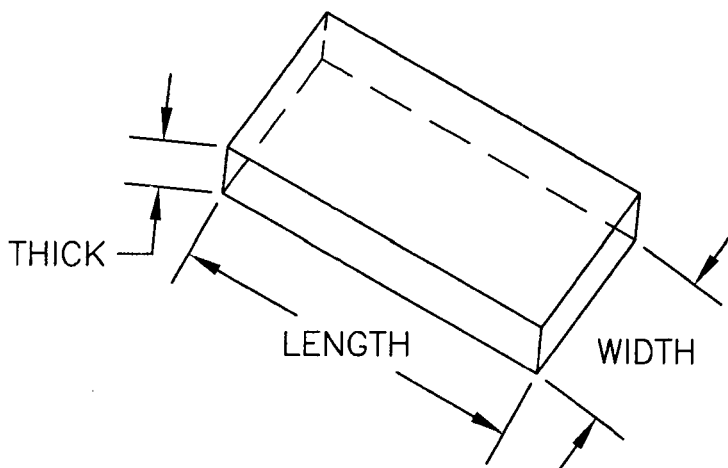
NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



DESIGN #	DRAWN BY PH	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED CP	APPROVED #	DRAWING NO. D6102	Rev. D SHEET 1 OF 1
DATE 06.06.30		TITLE SADDLE BILLET, 6061	SCALE NTS
A	01.03.30	NEW ISSUE	
B	03.10.20	ADD D6102-005/-007/-009	
C	04.08.25	ADD D6102-010/-011	
D	06.06.30	ADD D6102-013	

SPECIFICATION CONTROL DRAWING



SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 25130 MJS
12/06/07

RELEASED

06.08.15 #

PURCHASE MATERIAL ACCORDING TO THE FOLLOWING TABLE. SPECIFY ALLOY, LENGTH x WIDTH x THICK (+0.06/-0.00), AND GRAIN DIRECTION AS SHOWN.

TOLERANCE ON ALL DIMENSIONS IS +0.06/-0.00.

ALL DIMENSIONS ARE IN INCHES.

Part No.	Alloy	Length	Width	Thick	Grain Direction
D6102-001	6061-T6/T651 (QQ-A-250/11 or QQ-A-200/8)	7.880	6.250	2.000	Along 7.880 Length
D6102-003	6061-T6/T651 (QQ-A-250/11 or QQ-A-200/8)	6.000	6.250	2.000	Along 6.000 Length
D6102-005	6061-T6/T651 (QQ-A-250/11 or QQ-A-200/8)	47.85	15.250	1.000	Along 47.85 Length
D6102-007	6061-T6/T651 (QQ-A-250/11 or QQ-A-200/8)	7.500	7.000	2.500	Along 7.500 Length
D6102-009	6061-T6/T651 (QQ-A-250/11 or QQ-A-200/8)	11.000	6.000	5.000	Along 11.000 Length
D6102-010	6061-T6/T651 (QQ-A-250/11 or QQ-A-200/8)	7.950	8.250	2.500	Along 7.950 Length
D6102-011	6061-T6/T651 (QQ-A-250/11 or QQ-A-200/8)	6.500	8.250	2.500	Along 6.500 Length
D6102-013	6061-T6/T651 (QQ-A-250/11 or QQ-A-200/8)	6.500	7.000	2.000	Along 6.500 Length

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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

B I L L O F L A D I N G

No: PEC 771196

Ship From:
 THYSSENKRUPP MATERIALS NA
 2821 LANGSTAFF ROAD
 CONCORD, ONTARIO L4K 5C6
 Tel: 905 669 9444 Fax: 9057389033

Ship Date 14Jun12 at 14:28 From PF.
 Probill
 Via VIM TRANSFER
 FOB CONCORD
 Frt PREPAID
 Route 0- 0 Manifest
 Vhcle Trailer
 Slp STAN IVERS (905-532-1350)
 Sold To: (20115)
 DART AEROSPACE
 1270 ABERDEEN ST
 HAWKESBURY, ON K6A 1K7

Ship To: (1)
 DART AEROSPACE
 1270 ABERDEEN ST
 HAWKESBURY, ON K6A 1K7
 Tel: 613-632-9577 Fax: 613-632-1053

B I L L O F L A D I N G

1) Our Order PEC-460623- 1 Your PO # 17190
 Part # D6102-013
 ALUMINUM PLATE 6061-T651
 2.00" THICK X 6.5000" X 7.0000"
 *****GRAIN DIRECTION TOWARD 6.50 DIM*****

Heat Number
 557036A1

Tag No
 77069

Quantity
 12.64 SFT

PCS
 40

Wt LBS
 368

TOTAL: Tags 1 PCS 40 LBS 368

Heat Number
 557036A1

*** Chemical Analysis ***

MILL TEST REPORTS, PACKING SLIPS ARE TO SENT WITH
 MATERIAL AND FAXED TO THE CUSTOMER PRIOR
 TO SHIPPING.

ATTN: CHANTAL/LINDA

** ALL PACKING SLIPS MUST HAVE THE HEAT NUMBER **
 ** REFERENCED ON IT **

TOTAL 1 SKID G.W 385 LBS

*CUSTOMER PICK-UP HRS AT THYSSENKRUPP MATERIALS NA
 CONCORD, ONT.* *** 9:00 AM TO 4:00 PM ***
 **** TEL. 800-926-2600 ****

 * WE STOCK STAINLESS STEEL *

Page: 1Continued

TOUTES ERREURS ET/OU MARCHANDISES MANQUANTES DOIVENT ÊTRE
 RAPPORTÉES IMMÉDIATEMENT.

ERRORS OR SHORTAGE MUST BE REPORTED IMMEDIATELY

RETOUR DE MARCHANDISES AVEC NOTRE NUMERO D'APPROBATION SEULEMENT.
 MERCHANDISE MAY NOT BE RETURNED WITHOUT OUR APPROVAL NUMBER.

B I L L O F L A D I N G
Ship From:
THYSSENKRUPP MATERIALS NA
2821 LANGSTAFF ROAD
CONCORD, ONTARIO L4K 5C6
Tel: 905 669 9444 Fax: 9057389033

No: PEC 772196
Ship Date 14Jun12 at 14:28 From PEW
Probill
Via VIM TRANSFER
FOB CONCORD
Frt PREPAID
Route 0- 0 Manifest
Vhcle Trailer
Slp STAN IVERS (905-532-1350)
Sold To: (20115)
DART AEROSPACE

Ship To: (1)
DART AEROSPACE

=====

B I L L O F L A D I N G

* PLEASE LET US QUOTE YOUR NEXT REQUIREMENT *

***PLEASE NOTE A \$25.00 ENERGY SURCHARGE WILL BE
ADDED TO EVERY ORDER.***

Page: 2 Last

TOUTES ERREURS ET/OU MARCHANDISES MANQUANTES DOIVENT ÊTRE
RAPPORTÉES IMMÉDIATEMENT.
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RETOUR DE MARCHANDISES AVEC NOTRE NUMERO D'APPROBATION SEULEMENT.
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B I L L O F L A D I N G

No: PEC 772196

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THYSSENKRUPP MATERIALS NA
2821 LANGSTAFF ROAD
CONCORD, ONTARIO L4K 5C6
Tel: 905 669 9444 Fax: 9057389033

Ship Date 14Jun12 at 14:28 From PFW
Probill
Via VIM TRANSFER
FOB CONCORD
Frt PREPAID
Route 0- 0 Manifest
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Sold To: (20115)
DART AEROSPACE

Ship To: (1)
DART AEROSPACE

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RETOUR DE MARCHANDISES AVEC NOTRE NUMERO D'APPROBATION SEULEMENT.
MERCHANDISE MAY NOT BE RETURNED WITHOUT OUR APPROVAL NUMBER.

THYSSENKRUPP MATERIALS NA

PART AEROSPACE

ALUMINUM PLATE 6061-T651
 .000" THICK X 6.5000" X 7.0000"
 PART NO. D6102-013

PO/Rel 17190

We certify that this is a true copy of the report
 furnished by the producer of the metal, or data
 resulting from tests made in approved labs.

Certificate of Mill Test Results

BL PEC-772196-001

14Jun12

Signed by: _____

Pg 1/2

SHIP TO:

THYSSENKRUPP MATERIALS, TORONTO
 PECKOVERS PRIME WHSE
 2821 LANGSTAFF ROAD
 CONCORD, ON, CA L4K 5C6

KAISER ALUMINUM

Trentwood Works - Spokane, WA 99215

Phone: (800) 367-2586

CERTIFIED TEST REPORT

Serial Number

4253559

SOLD TO:

THYSSENKRUPP MATERIALS NA
 MATERIALS CA LTD.
 2821 LANGSTAFF ROAD
 CONCORD, ON, CA L4K 5C6

CUSTOMER PO NUMBER: PEC-233821		WORK PACKAGE:	CUSTOMER PART NUMBER:		SHIP RUN/LOAD: 102237/4	GOV'T CONTRACT NUMBER:	
KAISER ORDER NO: 1126169	LINE ITEM: 7	SHIP DATE: 7-FEB-2012	ALLOY: 6061	CLAD: BARE	TEMPER: T651	PRODUCT DESCRIPTION: KaiserSelect® Precision Plate	
WEIGHT SHIPPED: 5612 LB	QUANTITY: 4 PCS EST.	B/L NUMBER: 2035653		GAUGE: 2.0000 IN	DIAMETER/WIDTH: 48.500 IN	LENGTH: 144.500 IN	

MHU 1563696: LOT 557036A1: 3 pieces;

MHU 1563707: LOT 578941A7: 1 pieces;

Certified Specifications

AMS 4027/RevN
 EN 10204-3.1/Rev2004

ASME SB 209/Rev2004

ASTM B 209/Rev10

Test Code: 1511

Test Results

Lot: 557036A1 Cast 003

Drop 42

Ingot 2

Melted in USA

(ASTM E8/B557)

(EN 2002-1)

Tensile:	Temper	Dir / # Tests	Ultimate KSI (MPA)	Yield KSI (MPA)	Elongation %
	T651	LT / 2 (Min:Max)	50.4 : 52.0 (348 : 359)	45.0 : 46.4 (310 : 320)	14.7 : 15.2

(ASTM E1251)

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER
Actual	0.73	0.5	0.33	0.07	1.1	0.19	0.08	0.02	0.01	0.00	TOT 0.06

One
12/06/15

DART AEROSPACE

PO/Rel 17190

BL PEC-772196-001

14Jun12

ALUMINUM PLATE 6061-T651
2.00" THK X 6.5000" X 7.0000"
PART NO. D6102-013

We certify that this is a true copy of the report
furnished by the producer of the metal, or data
resulting from tests made in approved labs.

Signed by: _____

Pg 2/2

KAISER ALUMINUM

Trentwood Works - Spokane, WA 99215
Phone: (800) 367-2586

CERTIFIED TEST REPORT

Serial Number
4253559

Lot: 578941A7 Cast 848 Drop 41 Ingot 3 Melted in USA

(ASTM E8/B557)
(EN 2002-1)

Tensile:	Temper	Dir / # Tests	Ultimate KSI (MPA)	Yield KSI (MPA)	Elongation %
	T651	LT / 2 (Min:Max)	49.7 : 51.0 (343 : 352)	44.5 : 46.3 (307 : 319)	13.6 : 15.0

(ASTM E1251)

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER
Actual	0.69	0.5	0.29	0.05	1.0	0.18	0.17	0.02	0.01	0.00	TOT 0.04

ALLOY LIMITS

	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER	MAX
6061												
MIN	0.40	0.0	0.15	0.00	0.8	0.04	0.00	0.00	0.00	0.00	EACH	0.05
MAX	0.8	0.7	0.40	0.15	1.2	0.35	0.25	0.15	0.05	0.05	TOT	0.15

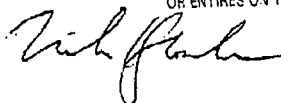
Aluminum Remainder

TEST NOTES

6061 sheet or plate certified to AMS 4025, AMS 4026, or AMS
4027 also meets applicable requirements of AMS-QQ-A-250/11
Rev.A.

CERTIFICATION

KAISER ALUMINUM FABRICATED PRODUCTS, LLC (KAISER) HEREBY CERTIFIES THAT METAL SHIPPED UNDER THIS ORDER WAS MELTED IN THE UNITED STATES OF AMERICA OR A QUALIFYING COUNTRY PER DFARS 225.872-1(a), WAS MANUFACTURED IN THE UNITED STATES OF AMERICA, AND MEETS THE REQUIREMENTS OF DFARS 252.225 FOR DOMESTIC CONTENT. THIS MATERIAL HAS BEEN INSPECTED, TESTED, AND FOUND IN CONFORMANCE WITH THE REQUIREMENTS OF THE APPLICABLE SPECIFICATIONS AS INDICATED HEREIN. ALL METAL WHICH IS SOLUTION HEAT TREATED COMPLIES WITH AMS 2772. ANY WARRANTY IS LIMITED TO THAT SHOWN ON KAISER'S STANDARD GENERAL TERMS AND CONDITIONS OF SALE. TEST REPORTS SHALL NOT BE REPRODUCED EXCEPT IN FULL, WITHOUT THE WRITTEN APPROVAL OF KAISER ALUMINUM FABRICATED PRODUCTS, LLC LABORATORY. THE RECORDING OF FALSE, FICTITIOUS, OR FRAUDULENT STATEMENTS OR ENTIRE ON THE CERTIFICATE MAY BE PUNISHED AS A FELONY UNDER FEDERAL LAW. ISO-9001:2000 CERTIFIED.



MIKE KLOCKE, LABORATORIES SUPERVISOR

Page 2 of 2



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID PO17190

Purchase Order Date 6/12/12

PO Print Date 6/12/12

Page Number 1 of 1

Order From : VC-COP001
THYSSENKRUPP MATERIALS CA LTD
O/A VPK METAL- C/O T27540/PO BOX 4275,POSTAL"A"
TORONTO, ON M5W 5V8
CA

Contact Name
Vendor Phone 905 669 9444
Vendor Fax 905 738 9033
Vendor Account Nbr

Buyer Chantal Lavoie
Requisition Nbr
Tax Resale Nbr 10127-2607
Terms Net 30
Currency CAD
FOB Destination-Collect

Ship To : DART AEROSPACE LTD 1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

FAKED
6/12/12

e-mail

Line Nbr	Reference Revision ID Vendor Part Number	Description/ Mfg ID	Req Date/ Taxable	Req Qty/ Unit of Measure	Ship Method	Unit Price	Extended Price
1	D6102-013P	6061-T6 7.0x6.5x2.0	6/20/12 Yes	40.00 Each	Yours ppd	\$29.5000	\$1,180.00

Special Inst: As per DWG: D6102 Rev: D
B85430
Aluminum Billet
7.000" X 6.500" X 2.000" THICK
TOLERANCE IS +0.06/0.00
GRAIN DIRECTION ALONG 6.500"
LENGTH
MAT: 6061-T6/T6511 (QQ-A-250/11 OR
QQ-A-200/8

D6101-015P

ALUM BILLET ✓

6/20/12
Yes

10.00
Each
Yours ppd

\$77.5000

\$775.00

Special Inst: 9.450" X 6.250" X 2.50" THICK
TOLERANCE ON DIMS ARE +0.030/-
0.000
GRAIN DIRECTION ALONG 9.450"
LENGTH
MAT: 7075-T7351 (QQ-A-250/12)

MATERIAL CERTIFICATION
REQ'D UPON DELIVERY

PO Total:

\$1,955.00

No substitution or deviation without
consent.

Certificate of Conformity or Material
Certification required YES NO

Change Nbr: 1

Change Date: 6/12/12

Q U O T A T I O N

No: PEC ST-459995

Quoted By:
 THYSSENKRUPP MATERIALS NA
 2821 LANGSTAFF ROAD
 CONCORD, ONTARIO L4K 5C6
 Tel: 905 669 9444 Fax: 9057389033

Quoted To: (20115)
 DART AEROSPACE

Quoted Ship To: (1)
 DART AEROSPACE

Q U O T A T I O N

QT No: PEC ST-459995

 * WE STOCK STAINLESS STEEL!!!! *
 * PLEASE LET US QUOTE YOUR NEXT REQUIREMENT *

 ***PLEASE NOTE A \$25.00 ENERGY SURCHARGE WILL BE
 ADDED TO EVERY ORDER.***

Order Totals: 2 Items 536 LBS

Material	Processing	Freight	Other	Taxes	ORDER AMT
1,955.00			25.00	257.40	2,237.40
Taxes: ONHSTS	257.40	0.00		0.00	0.00

